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Abstract

STUDIES ON FISSION PRODUCTS IN THE ENVIRONMENT

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An evaluation is presented on the transfer and fate of fission products released into the environment, using information resulting from fallout studies and from laboratory and field experiments related to waste disposal.

The paper presents data from radiochemical and -spectrometry on airborne activity, fallout rate and cumulative deposition in Argentina for the past seven years. Relationships between airborne activity, deposition and rainfall are studied, as well as seasonal trends and other effects.

Food chain contamination is examined with special emphasis given to pathways leading to man for strontium, cesium and iodine radionuclides. Correlations of food levels with fallout rates and deposition are attempted.

The soil-plant transfer step is studied using fallout data and information from experimental work relating to waste disposal.

Some attention is paid to fresh water food chains and to biological indicators which may be useful in monitoring the vicinity of nuclear installations.

The uptake of Strontium-90 by humans is specially considered. Using data of diets and bones of infants and children of different age groups, strontium to calcium discrimination factors are worked out and discussed together with those obtained from stable strontium measurements.

In an appendix, the paper includes data on radionuclide levels in materials from the Antarctic.

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